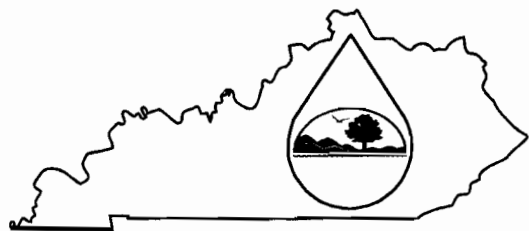


KPDES FORM HQAA



Kentucky Pollutant Discharge Elimination System (KPDES)

High Quality Water Alternative Analysis

The Antidegradation Implementation Procedures outlined in 401 KAR 5:030, Section 1(3)(b)5 allows an applicant who does not accept the effluent limitations required by subparagraphs 2 and 3 of 5:030, Section 1(2)(b) to demonstrate to the satisfaction of the Environmental and Public Protection Cabinet that no technologically or economically feasible alternatives exist and that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the water is located. The approval of a POTW's regional facility plan pursuant to 401 KAR 5:006 shall demonstrate compliance with the alternatives analysis and socioeconomic demonstration for a regional facility. This demonstration shall also include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Permit Information

Facility Name:	Patriot Coal Company, L.P. KY DMP Permit 851-0045	KPDES NO.:	Pending
Address:	19070 Hwy 1078 S	County:	Henderson
City, State, Zip Code:	Henderson, KY 42420	Receiving Water Name:	UT of Lick Creek

II. Alternatives Analysis - For each alternative below, discuss what options were considered and state why these options were not considered feasible.

1. **Discharge to other treatment facilities.** Indicate which treatment works have been considered and provide the reasons why discharge to these works is not feasible.

See Attachment II-1

2. **Use of other discharge locations.** Indicate what other discharge locations have been evaluated and the reasons why these locations are not feasible.

See Attachment II-2

Discharge to other Treatment Works

Loadout LLC is proposing that all treatment facilities are to be located on site. These facilities consist of five sediment control structures, all located within the approved KDNR/DMP permit boundary that are subject to the applicable SMCRA regulations. These regulations require that downstream water quality and quantity not be impacted by the proposed operation. The facilities are designed to handle all runoff from the permitted area.

Other Possible Treatment Facilities

The City of Henderson has the closest waste water treatment facility. It is a sanitary sewage treatment facility. They are presently under mandate to separate the storm water from the rest of the sewerage to relieve the load on their treatment facility. I suppose that they might be persuaded to receive the run off water from the Loadout LLC mine site if Loadout would agree to pay the cost of constructing the required treatment facility; would agree to pay a fee for operating the facility; and would agree to pay to have the facilities removed upon termination of the need for the treatment of the run off water. There is no reason to believe that the City of Henderson could construct and operate these facilities at a cost savings for Loadout as they would have to be much the same facilities located at a different site.

The other factor that has to be considered with the City of Henderson as an alternate treatment facility is the method of transferring the water to them for treatment. The amount of water that would need to be transferred is: (assuming a yearly average rainfall of forty seven (47) inches) 685,427,040 Gals per year, 1,877,882 Gals per day, or 78,245 Gals per hour. There would seem to be two (2) options for conveying the water.

- 1) Option 1 – trucking. This would require eight (8) tractor trailer tank truck loads per hour, 24 hours per day, 365 days per year. It would require three (3) gallons of fuel per trip, 24 gallons per hour, 576 gallons per day, or 210,240 gallons per year. Since using the proposed on site treatment will use gravity to move the water this would result in a savings of 210,240 gallons of diesel fuel per year. It would also avoid greatly increasing the truck traffic on the highways to and from Henderson.
- 2) Option 2 – Pumping. This would require the acquisition of approximately five (5) miles of right-of-way easement at the rate of probably \$100,000 per mile. Pipelines will have to be laid and gathering pumps will have to be installed to get all the water from the five discharge points to one place for pumping to Henderson. Since Loadout doesn't have power of condemnation, right-of-way acquisition may present a major problem. Pump and pipe requirements to get the water to Henderson will be significant. It will require a pump and pipe line large enough to move 78,245 gallons of water with suspended solids per hour, twenty four hours a day, three hundred and sixty five day a year overcoming 75 feet of static head and 207 feet of frictional head. The pipeline would require approximately 26,400 feet of 10" PVC pipe installed at a cost of \$35.00 per foot or \$924,000. A 150 HP pump and wet well would have to be installed at a cost of approximately \$72,000. If we concern our self with the

Discharge to other Treatment Works

possibility of break downs and power outages, we probably will want to install a backup pump and a stand by generator. It would appear that the cost of this option will exceed \$1,000, 000 not counting the cost of purchased energy to drive the pump.

If we are able to overcome the problems and expense of pumping or hauling, we still have the problem of getting the water back from whence it came so as to discharge the water into Lick Creek. It is my understanding that regulations require that loss of water to a drainage system will not exceed ten (10) percent.

In conclusion, the possible alternatives to the proposed treatment, would greatly increase the cost and would greatly increase the consumption of energy without providing benefits.

Alternate Discharge Locations

As is now proposed by Loadout LLC all discharge points are located so as to discharge the treated (suspended solids have been given time to settle to the bottom of the basins) water into the drainage ways that the water would flow to if not intercepted.

All other possible discharge points that could be considered that are located within the boundary of the property controlled by Loadout LLC would require pumping and the discharged water would end up in the same drainage area.

Water could be discharged into Ruce Creek approximately 1.5 miles north of the permit area. The option would require pumping the discharge water across difficult terrain, and in excess of 10,000 feet of piping to connect the basins to the pump house and run a line to Ruce Creek. Assuming \$20/foot for construction of the water line, in addition to a minimum of 8 required pumps at \$7500 dollars a piece, the project would cost in excess of \$260,000. Additional charges would be construction of sediment control structures and associated diversion ditches as well as permission and compensation for landowners the cost to power the pumps and employees to operate the system.

II. Alternatives Analysis - continued

3. **Water reuse or recycle.** Provide information about opportunities for water reuse or recycle at this facility. If water reuse or recycle is not a feasible alternative at this facility, please indicate the reasons why.

See Attachment II-3

4. **Alternative process or treatment options.** Indicate what process or treatment options have been evaluated and provide the reasons they were not considered feasible.

See Attachment II-4

Water Reuse or Recycle

The potential for reuse or recycling of the run-off water from this operation are very limited. However, approximately 12,000 to 15,000 gallons/day of the water will be used on the haul road located on an adjoining permit for fugitive dust control.

There would seem to be no possibility of the City of Henderson, the closest municipal water supplier, desiring this water for distribution purposes, as their fresh water treatment facility is located in close proximity to the Ohio River which provides them with an almost unlimited supply of water for treatment.

There is a possibility that Loadout LLC may need to use some of the water for irrigation when their reclamation operation begins. Much of the proposed permit area will be claimed as cropland. Average county yields for the crops will have to be achieved to be approved for bond release.

There are some farmers downstream that might want to use the water for irrigation of their crops, but they would prefer that Loadout would discharge the water into Lick Creek as proposed and they would then remove the water from the creek closer to their fields.

Alternative Process or Treatment Options

The water to be treated by Loadout LLC is water that has a somewhat elevated level of suspended solids due to falling, in the form of rain, onto disturbed land surface that has had the vegetation removed. As the water drains from this disturbed surface it picks up soil particles that are suspended in the water.

The treatment process proposed to be used at the Loadout site is the same process used by almost every if not all water treatment facilities everywhere. They propose to cause the water to collect in sediment ponds that will delay discharge until suspended have been allowed to settle out and sink to the bottom of the ponds. The discharge water from these ponds will be monitored on regular bases, bi-monthly. The sampled water will be tested for suspended solids, dissolved solids, sulfates, manganese, iron, alkalinity, acidity, and pH using methods as set out in the current edition of "Standard Methods for the Examination of Waste and Waste Water". If the sample results fall outside the acceptable parameters, additional treatment will be required.

A third option would be to install a waste water treatment plant. This facility would need to be of considerable size as it will be required to handle a 25 year, 24 hour rain event. At its approximated maximum limit, the facility must be able to handle 768,128 gpm. This option would require a sizeable expenditure, maybe as much as \$10,000,000. If this was the only option, it would probably result in the same ends as alternate number 2. That is the plans for mining would be abandoned.

II. Alternatives Analysis - continued

5. **On-site or subsurface disposal options.** Discuss the potential for on-site or subsurface disposal. If these options are not feasible, then please indicate the reasons why.

See Attachment II-5

6. **Evaluation of any other alternatives to lowering water quality.** Describe any other alternatives that were evaluated and provide the reasons why these alternatives were not feasible.

See Attachment II-6

On-site or Subsurface Disposal Options

There will be no waste or contaminated water requiring disposal produced by the proposed operation. However, disposal options that could be considered are:

- 1) The installation of an on site sanitary septic system, i.e., septic tank has been evaluated. Constructing a system large enough to handle the volume of water would be impractical. It is estimated that a septic system capable of handling a 25 year, 24 hour storm event would cost over \$250,000. Such a system would require a septic tank, holding tanks, distribution boxes, lift stations, pumps, filter fabric, drainage pipes, gravel, an area of sufficient size and soil type to act as a drain field, and construction cost. Septic systems are designed to degrade organic and biodegradable material over time by anaerobic digestion. While the source of the water would most likely contain some organic material and some needed bacteria, it would be inadequate to decompose the sediment and would work essentially the same as a sediment structure.
- 2) Constructing an on-site storm water treatment facility could be considered. The volume of discharge and the lift required make this an impractical option. Calculating the peak flow from a 25 year, 24 hour rainfall event of 768,125 gpm would make the estimated cost of this disposal option in excess of a million dollars.
- 3) One could look to subsurface disposal as an option. There are no known abandoned underground mines in close proximity to the proposed site. If there were, they would more than likely be full of water in their present state. If water were to be pumped into them, there is always the chance of having the water being forced to the surface in another location creating the potential for acid mine drainage.

Evaluation of Any Other Alternatives to Lowering Water Quality

There are alternatives to lowering water quality. They are:

- 1) Transferring the water to the City of Henderson as is discussed in Attachment II-1. The reasons why this not a feasible option is also addressed in the attachment.
- 2) Abandoning the plans to put the mine into operation. I am sure that the facility operator would not view this as a feasible option. They have spent more than a year and many thousands of dollars to obtain the permit to mine from the Division of Mine Permits. I am sure that the owner of the mineral rights would not view this as a feasible option as they have invested many millions of dollars purchasing coal reserves with the hope for a return on their investment. I am sure that the Kentucky Department of Revenue would view this option as less than desirable as it would mean a loss in revenue to them from, unmined coal tax, approximately \$3,772,000 in coal severance tax, sale tax, and income tax, both corporate and personal. The county of Henderson could lose out on potentially 195 jobs at an average salary of \$76,000 per year. I am sure that the County of Henderson and the potential employees would view this as bad option.
- 3) A third option would be to install a waste water treatment plant. This option would require a sizeable expenditure, maybe as much as \$10,000,000. If this was the only option, it would probably result in the same ends as alternate number 2. That is the plans for mining would be abandoned.

III. Socioeconomic Demonstration

1. State the positive and beneficial effects of this facility on the existing environment or a public health problem.

Stream restoration during reclamation will provide ecological lift to area perennial and intermittent streams previously impacted by agriculture. 9,995 feet of perennial and 9,721 feet of intermittent stream with stable channel configurations and wide riparian zones will replace entrenched streams and drainage ditches with denuded banks. Mitigated streams are expected to surpass existing streams in function, value, and diversity. Reclamation of an AML site adjacent to the project is a conditioned upon issuance of the permit; this will reclaim 153 ac of open pits and barren spoil and improve the local environment.

2. Describe this facility's effect on the employment of the area

See Attachment III-2

3. Describe how this facility will increase or avoid the decrease of area employment.

See Attachment III-3

4. Describe the industrial or commercial benefits to the community, including the creation of jobs, the raising of additional revenues, the creation of new or additional tax bases.

65 direct mining jobs will be created, as well as up to 130 indirect jobs. The payroll of \$5 million will stimulate the local economy. A new tax base will be created, estimated at \$2 million annually in coal severance taxes, \$74,000 in property taxes, plus income tax revenues. Coal produced at the facility will supply local preparation plants, and then major regional power generation facilities, maintaining jobs at these facilities and continuing low energy costs for the region.

5. Describe any other economic or social benefits to the community.

As a coal producer, Henderson County receives a proportionally larger amount of revenue generated from coal severance taxes. These monies can fund a number of projects that benefit the local communities. Henderson County is like all coal producing counties in that they become quite dependent on coal severance tax as a revenue source. Like enterprises, coal mines interact with many local support businesses which allows them to continue to survive in harmony.

Facility's Affect on the Employment of the Area

The proposed facility would create 65 direct mining jobs, as well as a number of indirect jobs (similar projects have created two indirect jobs for every direct mining position). Additional jobs would be created by those who service coal mines, such as mine equipment and parts suppliers, fuel suppliers, office and maintenance suppliers, transportation, engineering consultants, etc. An annual payroll for the facility is approximately 5 millions dollars. That is an average salary of \$76,000 per year.

How this Facility will Increase or Avoid the Decrease of Area Employment

This mining operation will provide an increase in employment of approximately 65 workers in Henderson County by providing for coal production for an approximate period of 10+ years.

Past studies have shown 2 indirect jobs are created for every 1 direct mining job, therefore resulting in the creation of 195 jobs. Other employment would be by businesses which service the mining operation such as mine equipment and parts suppliers fuel suppliers, office and maintenance suppliers, transportation, engineering consultants, etc.

In the 2000 US Census, unemployment in Henderson County Kentucky was approximately 5.1% with a labor force of approximately 18,427 workers. The addition of 195 jobs would result in 1.1% of the workforce being employed.

III. Socioeconomic Demonstration - continued

- | | <u>Yes</u> | <u>No</u> |
|--|-------------------------------------|-------------------------------------|
| 6. Will this project be likely to change median household income in the county? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. Will this project likely change the market value of taxable property in the county? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. Will this project increase or decrease revenues in the county? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. Will any public buildings be affected by this system? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

10. How many households will be *economically* or *socially* impacted by this project? 65 directly; indirect impact not quantifiable

11. How will those households be *economically* or *socially* impacted? (For example, through creation of jobs, educational opportunities, or other social or economic benefits.)

The only quantifiable impacts are those impacted by job creation. Households in the county, region, and state will be positively impacted through economic stimulus, inexpensive power generation, and new tax revenues. Coal severance taxes, payroll taxes, and property taxes all will return monies to Henderson County. By maintaining status as a coal producing county, a larger proportion of the severance taxes will be returned. These monies can fund various projects in the area, such as infrastructure development. Other local facilities (*i.e.* prep plants) will dependant on coal production from this facility. Its operation allows for the continued employment of the county workforce, generation of tax revenues, and stimulation of the local economy. The same applies on a regional level for the utilities receiving coal from the proposed site. Additionally, the inexpensive electricity provided to the area by local coal allows for lower business expenses, also stimulating the local and regional economy.

- | | <u>Yes</u> | <u>No</u> |
|---|--------------------------|-------------------------------------|
| 12. Does this project replace any other methods of sewage treatment to existing facilities?
(If so describe how) | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

- | | <u>Yes</u> | <u>No</u> |
|--|-------------------------------------|--------------------------|
| 13. Does this project treat any existing sources of pollution more effectively?
(If so describe how.) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Due to past channelization, eroding stream banks are contributing excessive amounts of sediment to downstream reaches and receiving waters. During mine reclamation, streams will be restored using natural channel design methods. These methods include establishing the stable dimension, pattern and profile for the proposed stream type based on future potential watershed conditions and valley features. By creating stable channel geometry that does not produce excessive bank shear stress, erosion and sediment supply will be significantly reduced.

Furthermore, reclaiming 153 acres of AML Land will improve water quality to area streams.

III. Socioeconomic Demonstration - continued

14. Does this project eliminate any other sources of discharge or pollutants?
(If so describe how.)
- Yes No
☒ ☐

See III -13


15. How will the increase in production levels positively affect the socioeconomic condition of the area?

Coal severance taxes, payroll taxes, and property taxes all will return monies to Henderson County. By maintaining status as a coal producing county, a larger proportion of the severance taxes will be returned. These monies can fund various projects in the area, such as infrastructure development. Other local facilities (i.e. prep plants) are dependant on coal production from this facility. Its operation allows for the continued employment of the county workforce, generation of tax revenues, and stimulation of the local economy. The same applies on a regional level for the utilities receiving coal from the proposed site. Additionally, the inexpensive electricity provided to the area by local coal allows for lower business expenses, also stimulating the local and regional economy.

16. How will the increase in operational efficiency positively affect the socioeconomic condition of the area?

See III - 16

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	David L. Webb	Telephone No.:	(270) 869-6731
Signature:		Date:	JUL 27 2009

How the Increase in Operational Efficiency Positively Affect the Socioeconomic Condition of the Area.

According to the US Census Bureau, the median household income for Henderson County Kentucky in 2007 was \$41,692/year. The average salary per employee at the coal mine is approximately \$76,932.01/year. This could have a significant impact on the median household income. Also, the total jobs, direct and indirect, could have a 1.1% impact on the unemployment rate of Henderson County.

This method of mining operates in a closed system where all runoff is diverted to a system of sedimentation basins which are designed to reduce sedimentation and contamination within streams and other accepting bodies of water. The discharge is analyzed two times per month in order to insure discharge parameters are within compliance. Mining permits require the land, post mining, to be of the same quality or better quality than it was prior to mining.